Specimen Based Research in China

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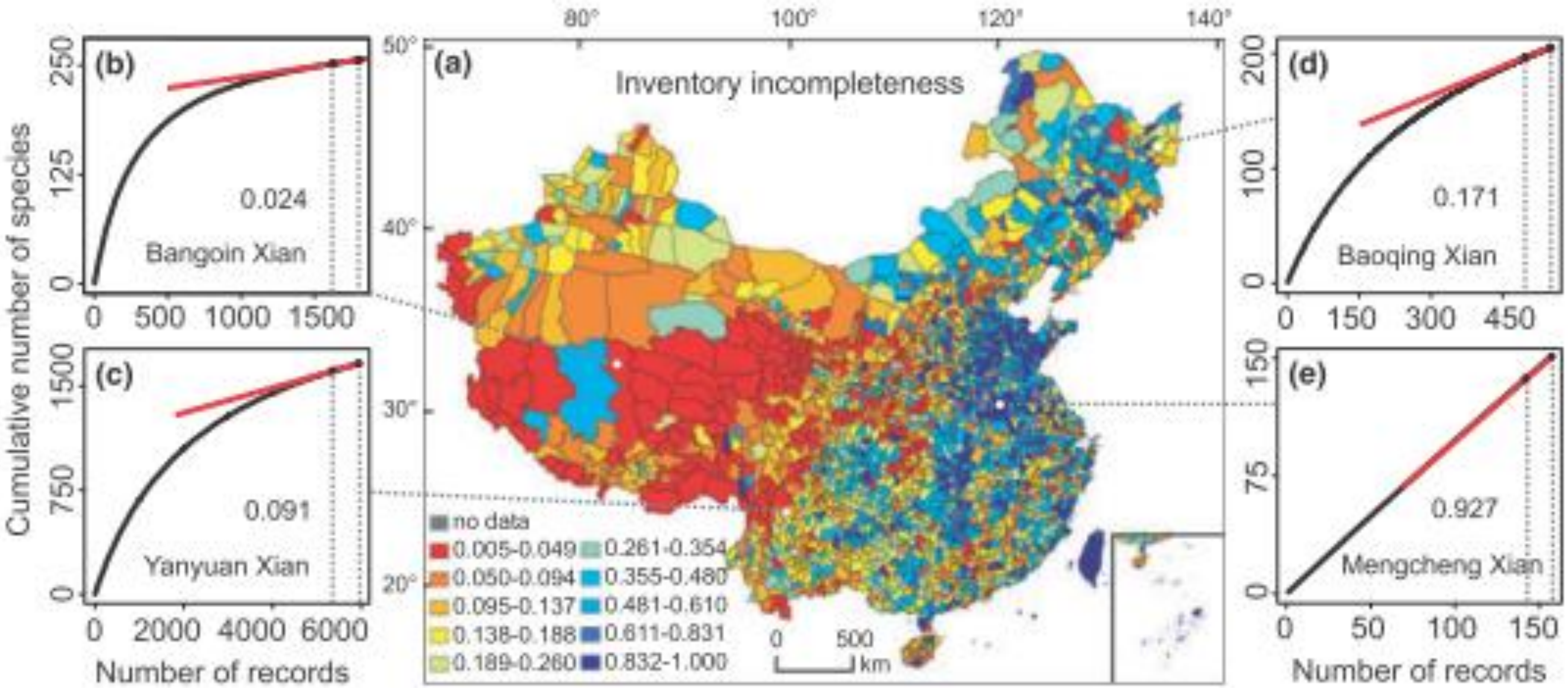
Specimens Based Research in China

- Taxonomy
- Biogeography
- Invasion ecology
- Conservation planning
- Phenology
- Climate change

Journal of Biogeography (*J. Biogeogr.*) (2013) **40**, 1415–1426

Geographical sampling bias in a large distributional database and its effects on species richness–environment models

Wenjing Yang[1,2,3], Keping Ma[1]* and Holger Kreft[2]*

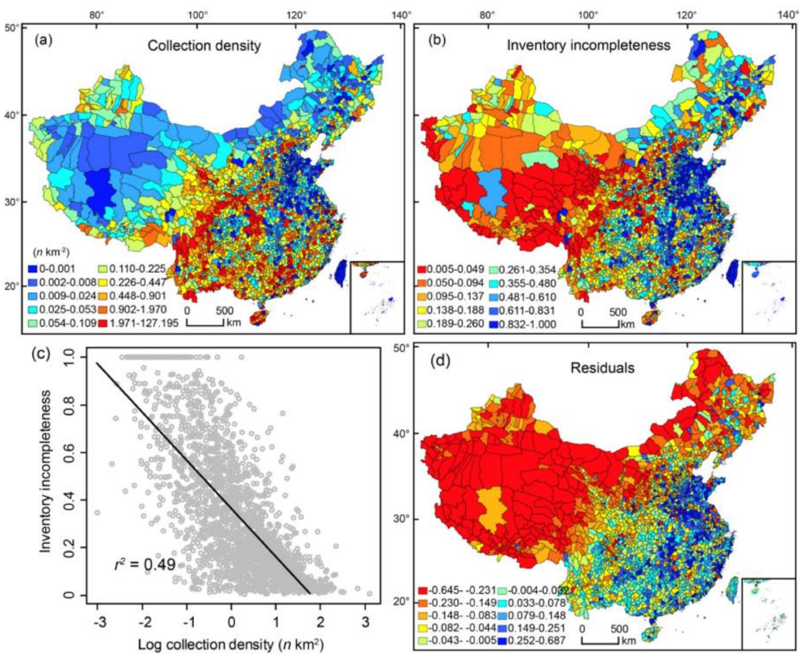


Global Ecology and Biogeography, (Global Ecol. Biogeogr.) (2014)

RESEARCH PAPER

Environmental and socio-economic factors shaping the geography of floristic collections in China

Wenjing Yang[1,2,3], Keping Ma[1]* and Holger Kreft[2]*



Mountainous areas are most intensively collected in China, whereas densely populated areas tend to be neglected by plant collectors. This sampling bias leads to woefully incomplete inventories, particular in urban and agricultural areas, and thus to a pronounced 'Wallacean shortfall', i.e. an incomplete documentation of species ranges.

Maps of (a) collection density and (b) inventory incompleteness as indicators of collecting effort for vascular plants in 2377 Chinese counties. (c) Relationship between collection density and inventory incompleteness. (d) Map of absolute residuals from ordinary least-squares regression in (c).

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Distribution of Endemic Plants in China

JSE Journal of Systematics and Evolution

Journal of Systematics and Evolution 49 (2): 81–94 (2011)

Features and distribution patterns of Chinese endemic seed plant species

[1,2,3]Ji-Hong HUANG [1,4]Jian-Hua CHEN [5]Jun-Sheng YING [1]Ke-Ping MA*

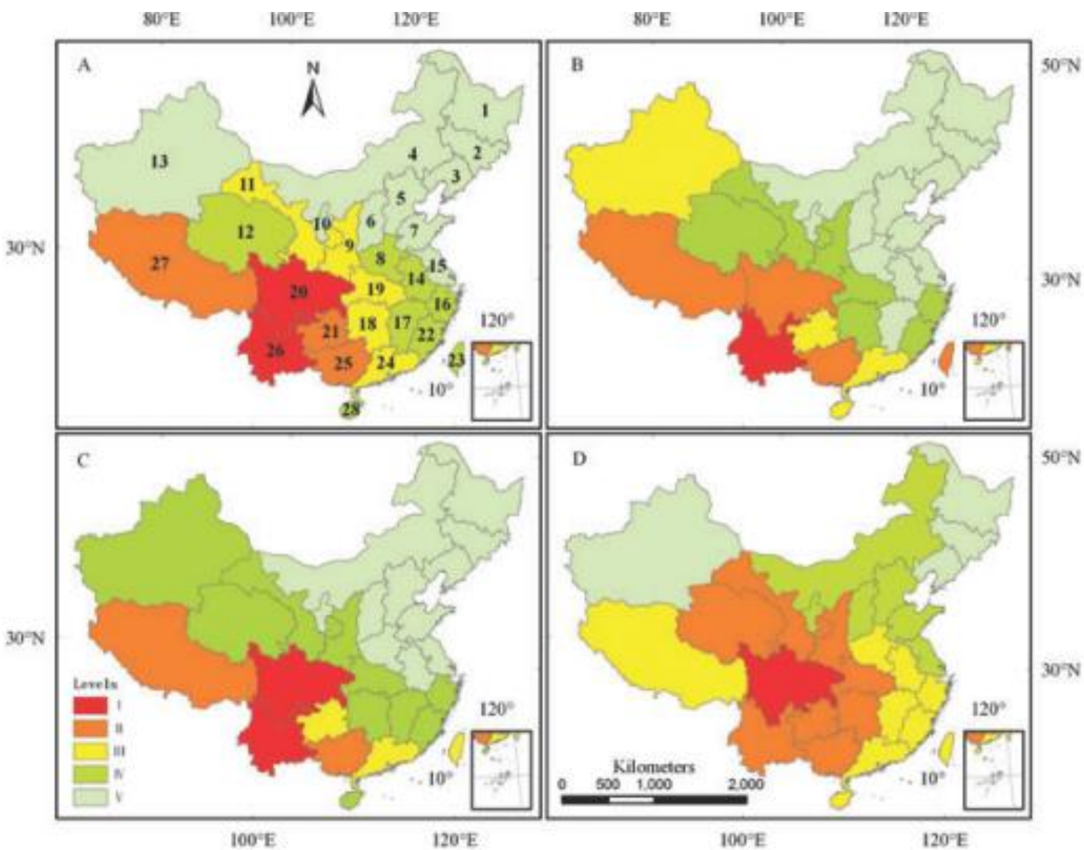


Fig. 3. Distribution of Chinese endemic species diversity by province as an operable geographical unit. **A,** Chinese endemic species richness. 1, Heilongjiang; 2, Jilin; 3, Liaoning; 4, Neimenggu; 5, Hebei; 6, Shanxi; 7, Shandong; 8, Henan; 9, Shaanxi; 10, Ningxia; 11, Gansu; 12, Qinghai; 13, Xinjiang; 14, Anhui; 15, Jiangsu; 16, Zhejiang; 17, Jiangxi; 18, Hunan; 19, Hubei; 20, Sichuan; 21, Guizhou; 22, Fujian; 23, Taiwan; 24, Guangdong; 25, Guangxi; 26, Yunnan; 27, Xizang; 28, Hainan. **B,** Local (provincial) endemic species richness. **C,** Weighted endemism. **D,** Proportion of endemism. The Chinese administrative map was downloaded from the National Fundamental Geographic Information System in China (http://nfgis.nsdi.gov.cn/nfgis/chinese/c_xz.htm). Levels I–V represent five levels for each of the above four indices using Jenks' optimization method (Jenks, 1967).

Families: 193

Genera: 1513

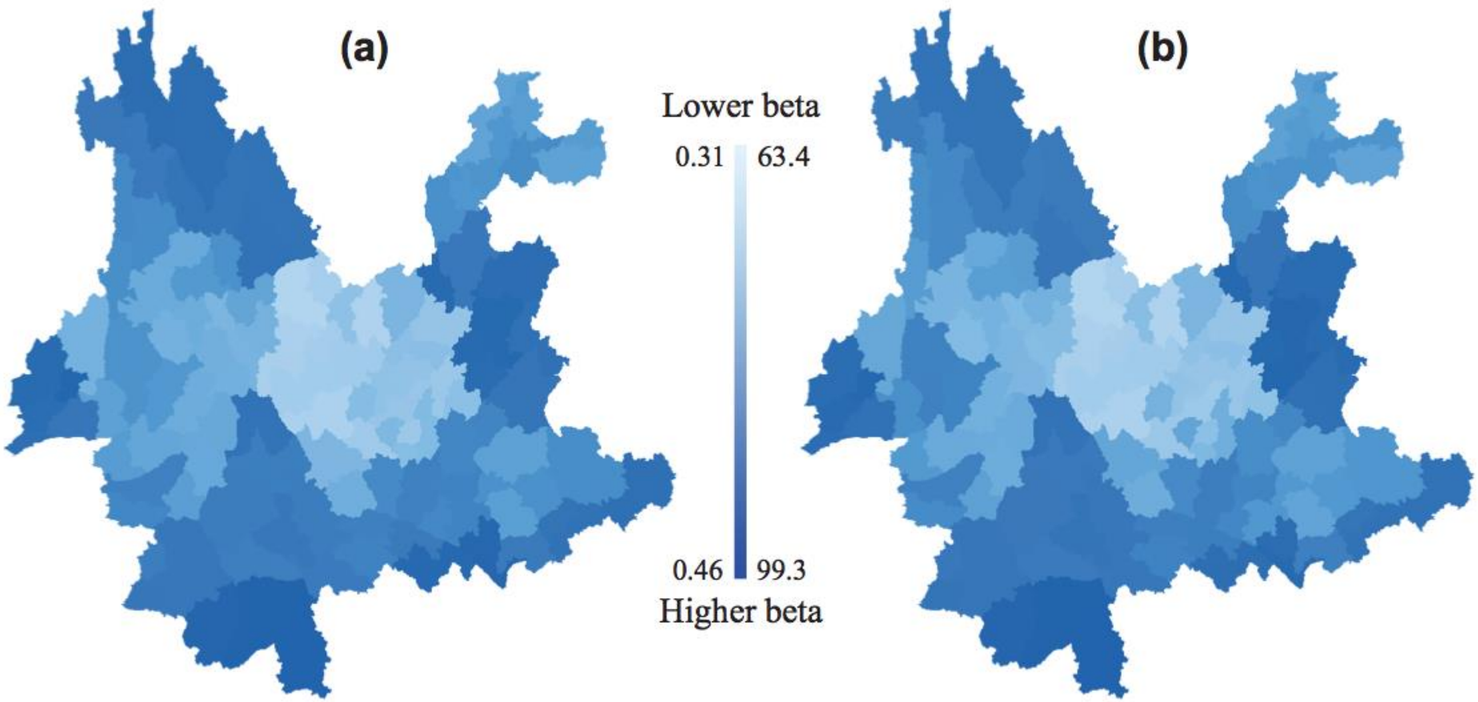
Species: 15103

SCIENTIFIC REPORTS

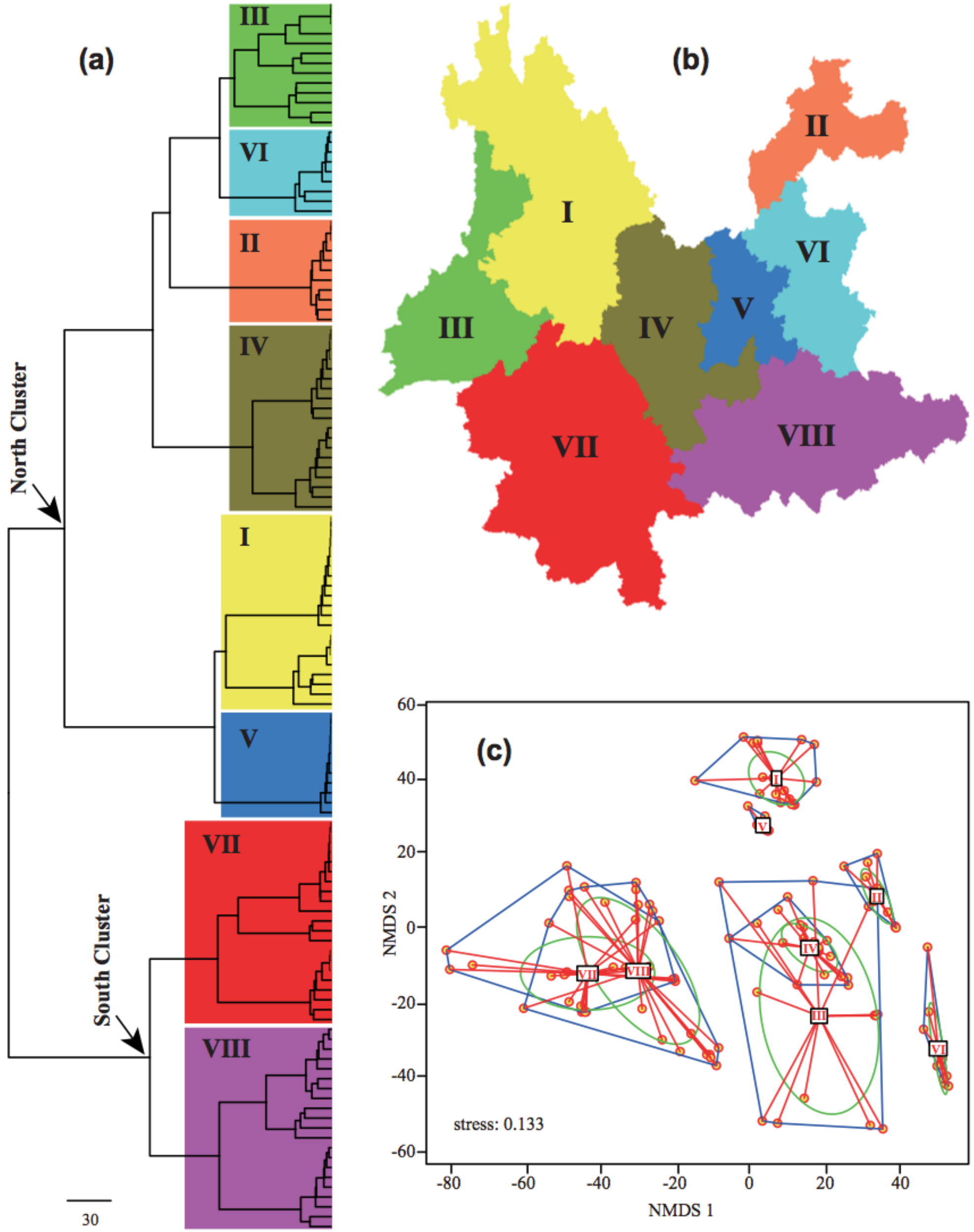
5 : 9396 | DOI: 10.1038/srep09396

A phylogenetically informed delineation of floristic regions within a biodiversity hotspot in Yunnan, China

Rong Li, Nathan J. B. Kraft, Jie Yang & Yuhua Wang



Maps of spatial turnover of Yunnan floristic assemblages in taxonomic composition (a) and phylogenetic composition (b). Color scale depicts the degree of taxonomic and phylogenetic turnover between the focal region and all other regions. The maps were generated using DIVA-GIS 7.5.



Dendrogram (a) and map (b) resulting from Ward hierarchical clustering and scatter plot (c) from non-metric multidimensional scaling (NMDS) two-dimensional ordination for floristic assemblages of Yunnan based on phylogenetic beta diversity distance matrices at the genus level. The eight distinct floristic regions are highlighted in the dendrogram with large colored rectangles and displayed in the map in different colors. The map was generated using DIVA-GIS 7.5.

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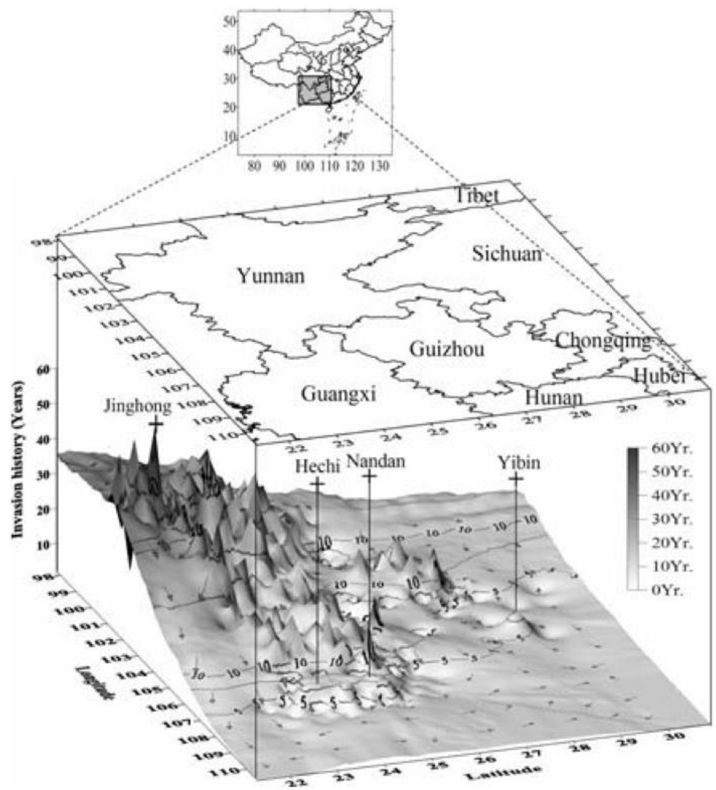
Landscape Ecol
DOI 10.1007/s10980-007-9096-4

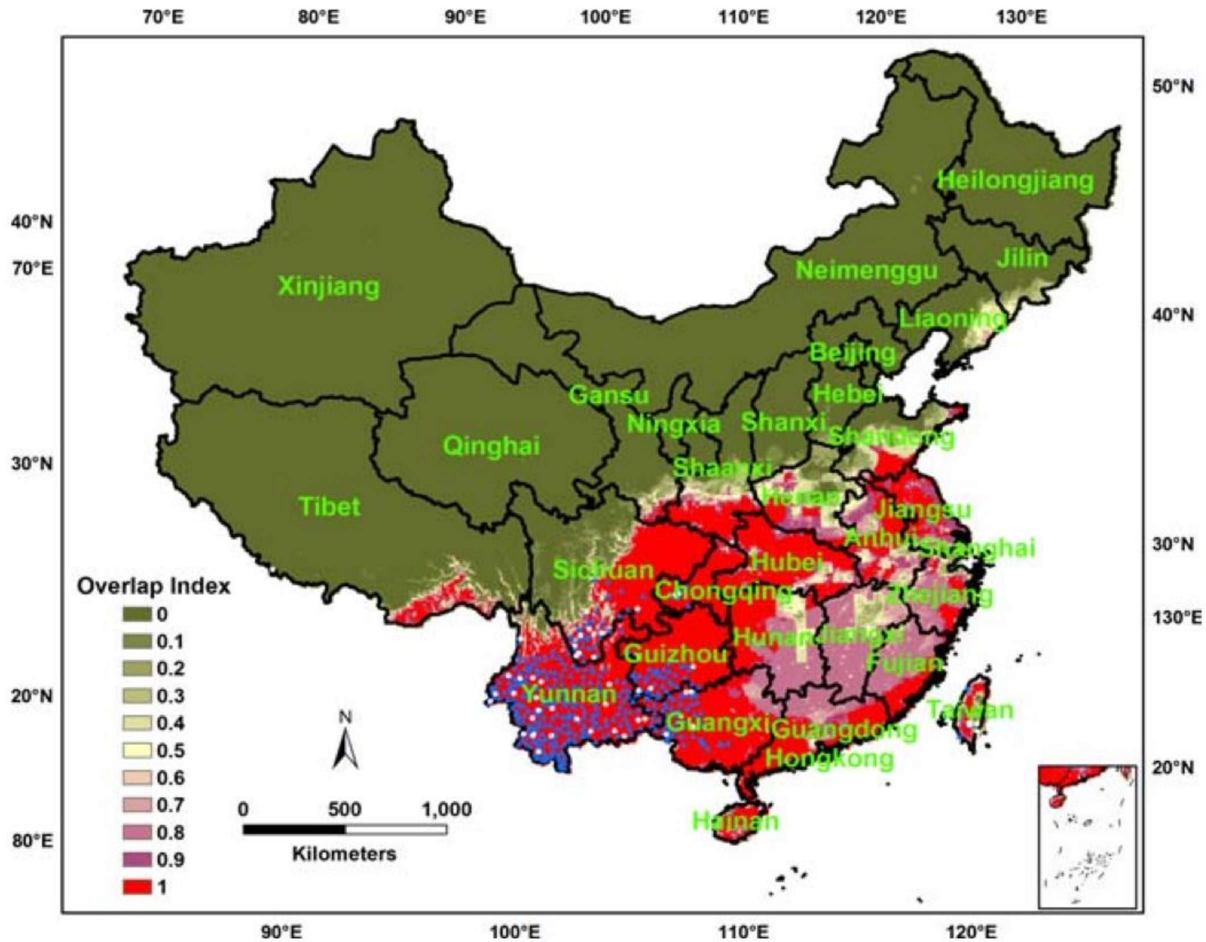
RESEARCH ARTICLE

Predicting the spatial distribution of an invasive plant species (*Eupatorium adenophorum*) in China

Li Zhu · Osbert J. Sun · Weiguo Sang ·
Zhenyu Li · Keping Ma

Spatiotemporal trends in crofton weed (*Eupatorium adenophorum*) invasion in south-west China. Geographical distribution of training data was plotted on the bottom x–y axis. Invasion history of distribution points based on recording dates was plotted on the vertical axis. The black lines represent the equal invasion time and the grey arrows indicate the direction of spread.





Geographic predictions for crofton weed (*Eupatorium adenophorum*) in China. Blue triangles represent the 390 spots used to train the predicted models and where the weed is known to occur, and white circles represent 51 extrinsic testing data used to test the predicted geographic range.

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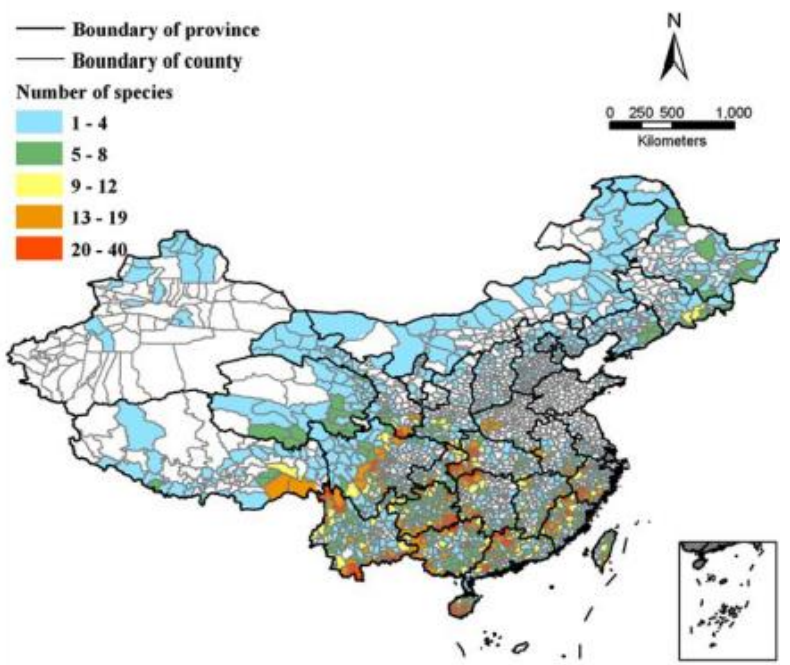
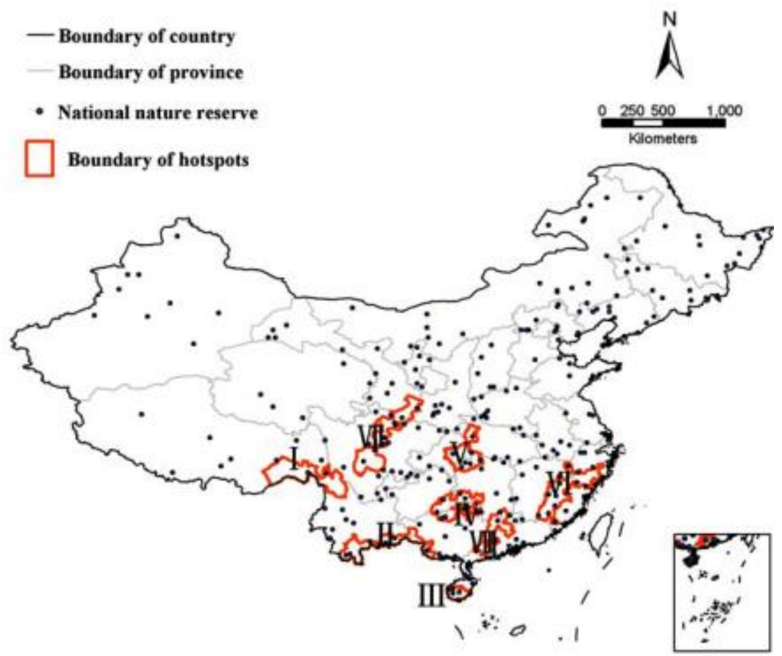
Biodivers Conserv (2008) 17:1783–1798
DOI 10.1007/s10531-008-9384-6

Geographic distribution patterns and status assessment of threatened plants in China

Yin-Bo Zhang · Ke-Ping Ma



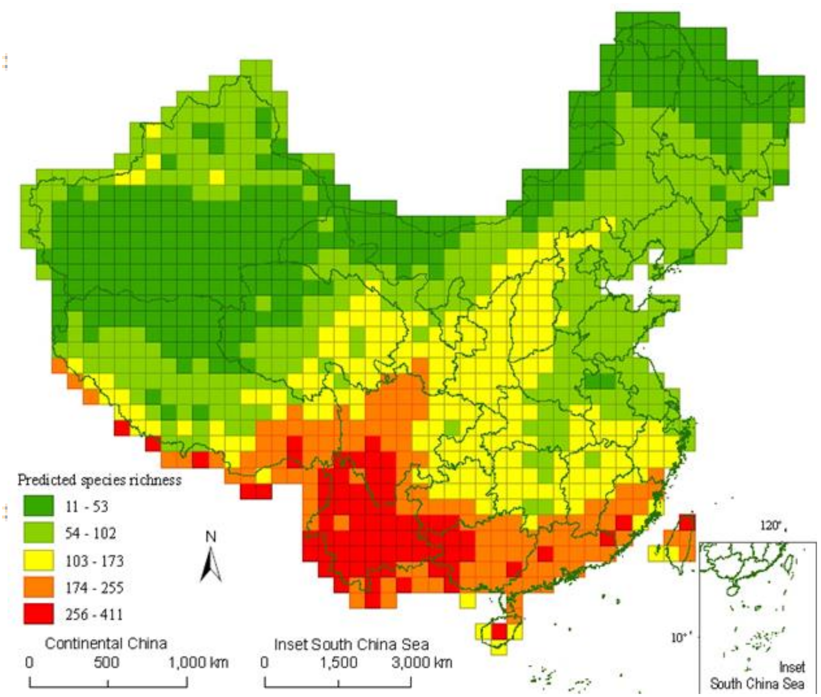


Diversity and Distributions, (Diversity Distrib.) (2012) **18**, 673–688

BIODIVERSITY RESEARCH

Identifying hotspots of endemic woody seed plant diversity in China

Jihong Huang[1,2]†, Bin Chen[1,2,3]†, Canran Liu[4], Jiangshan Lai[1], Jinlong Zhang[1] and Keping Ma[1]*



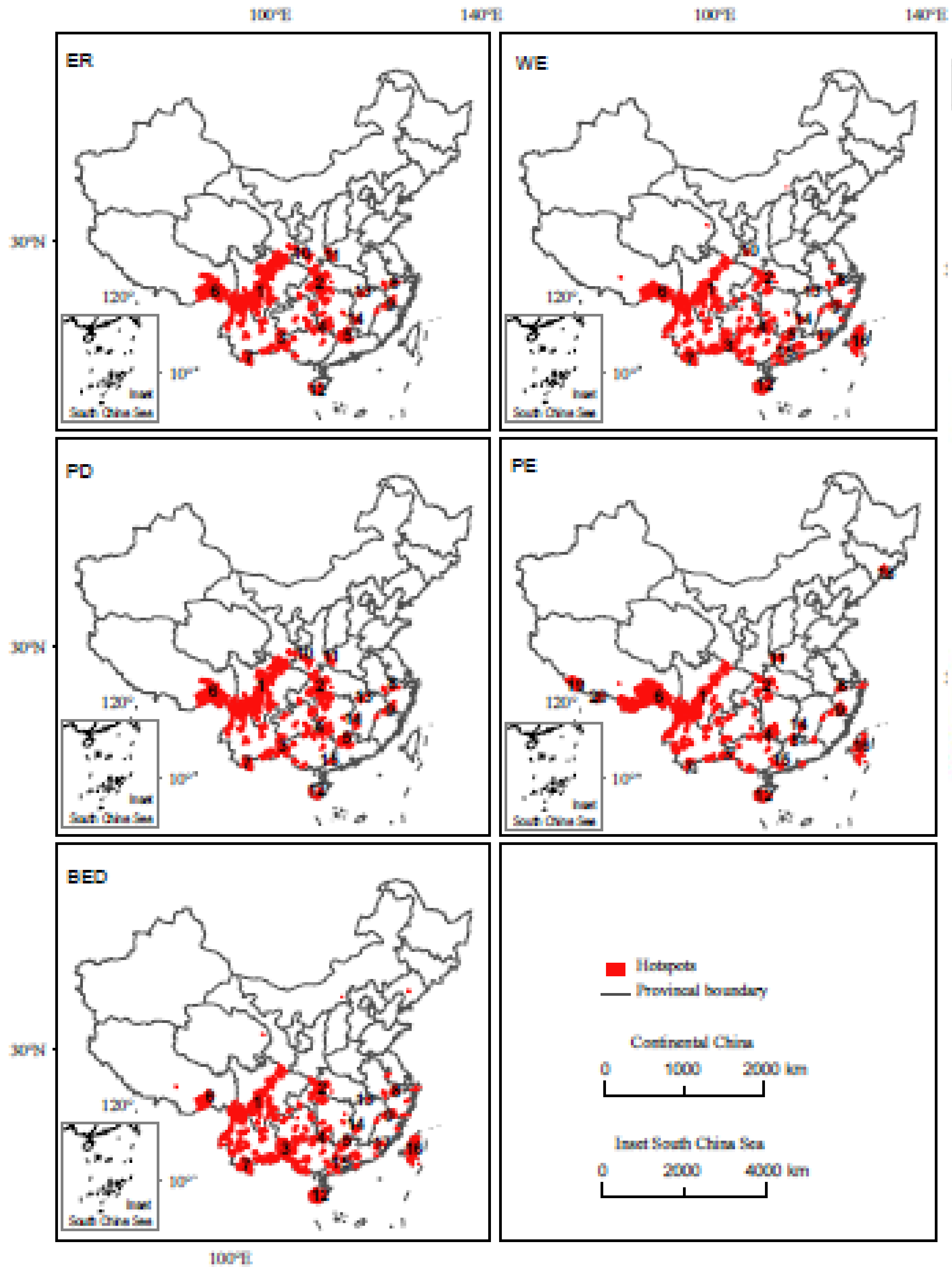
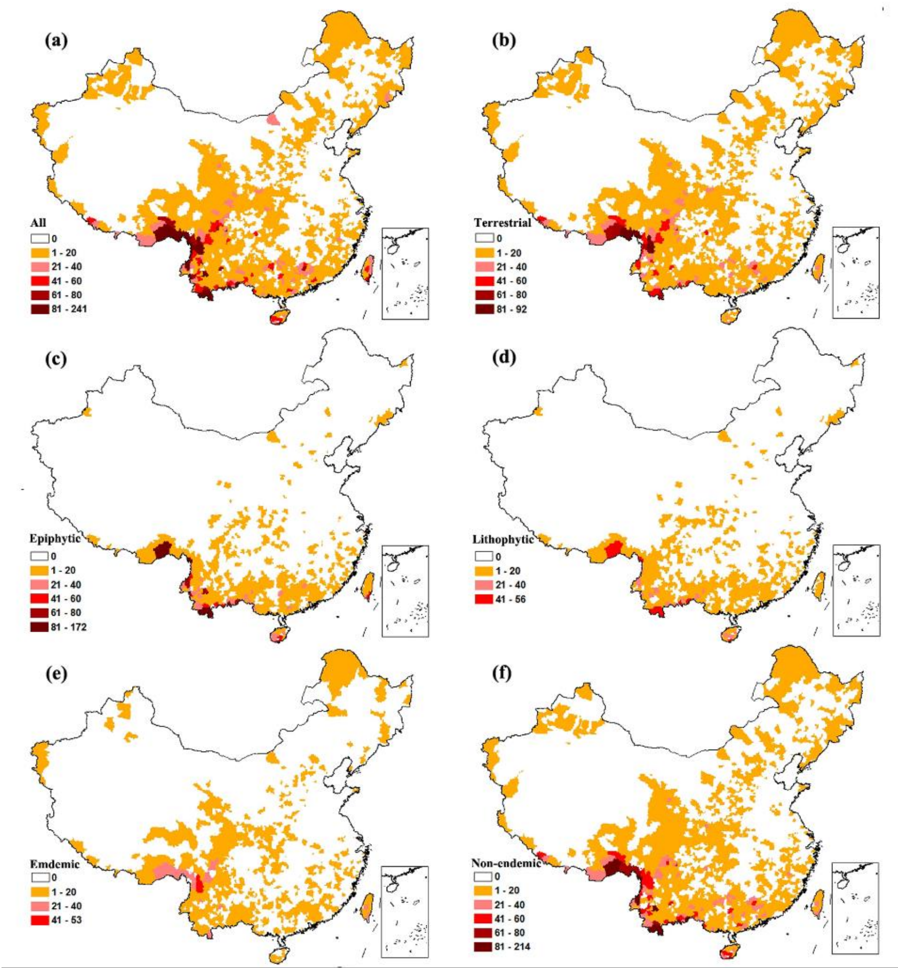


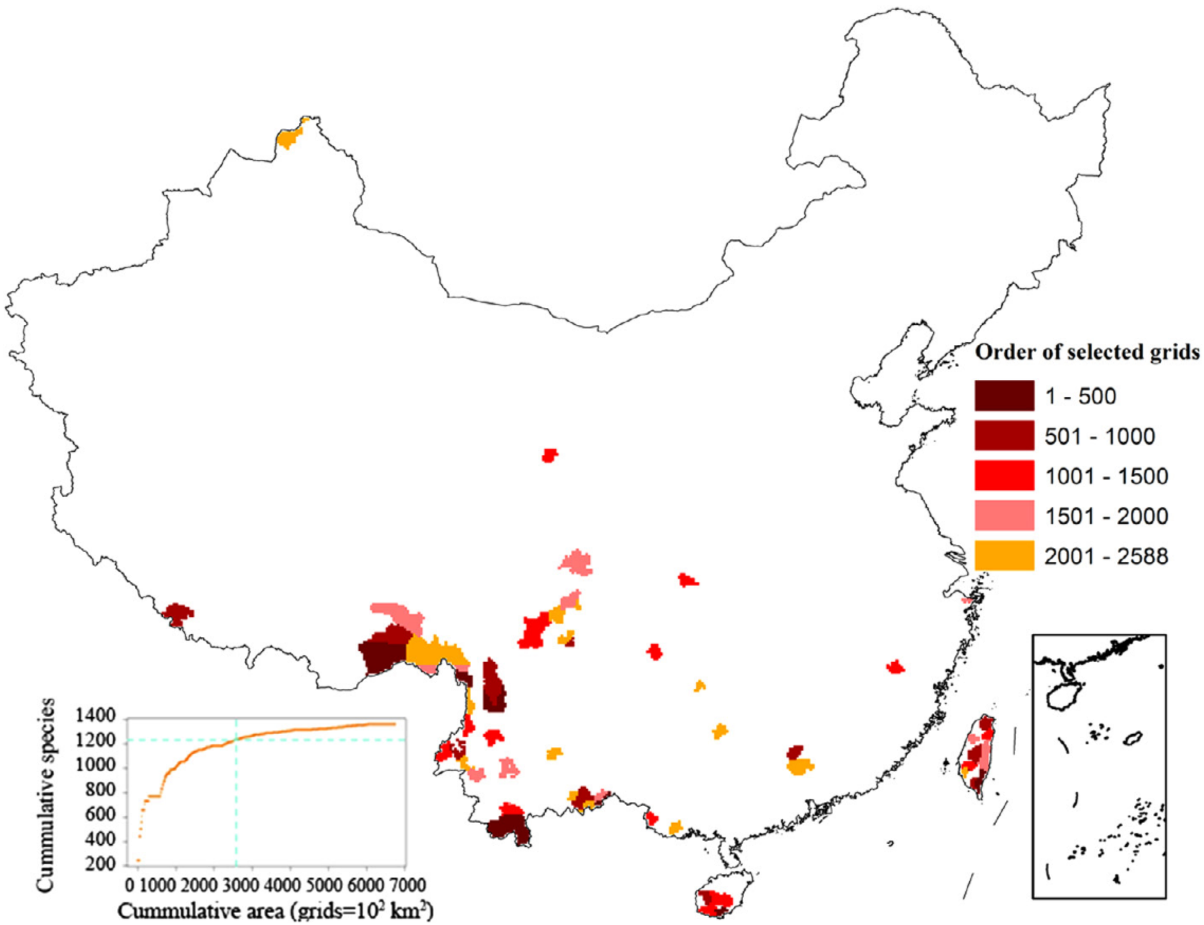
Figure 3 Geographic distribution of hotspots identified with five diversity indices for Chinese endemic woody seed plant species (CEWSPS). Five indices include endemic richness (ER), weighted endemism (WE), phylogenetic diversity (PD), phylogenetic endemism (PE), and biogeographically weighted evolutionary distinctiveness (BED). For each diversity index, hotspots are defined with local maximization method at the 5% level of area. Albers projection. Hotspot centre codes are consistent with Table 5.

Distribution and conservation of orchid species richness in China

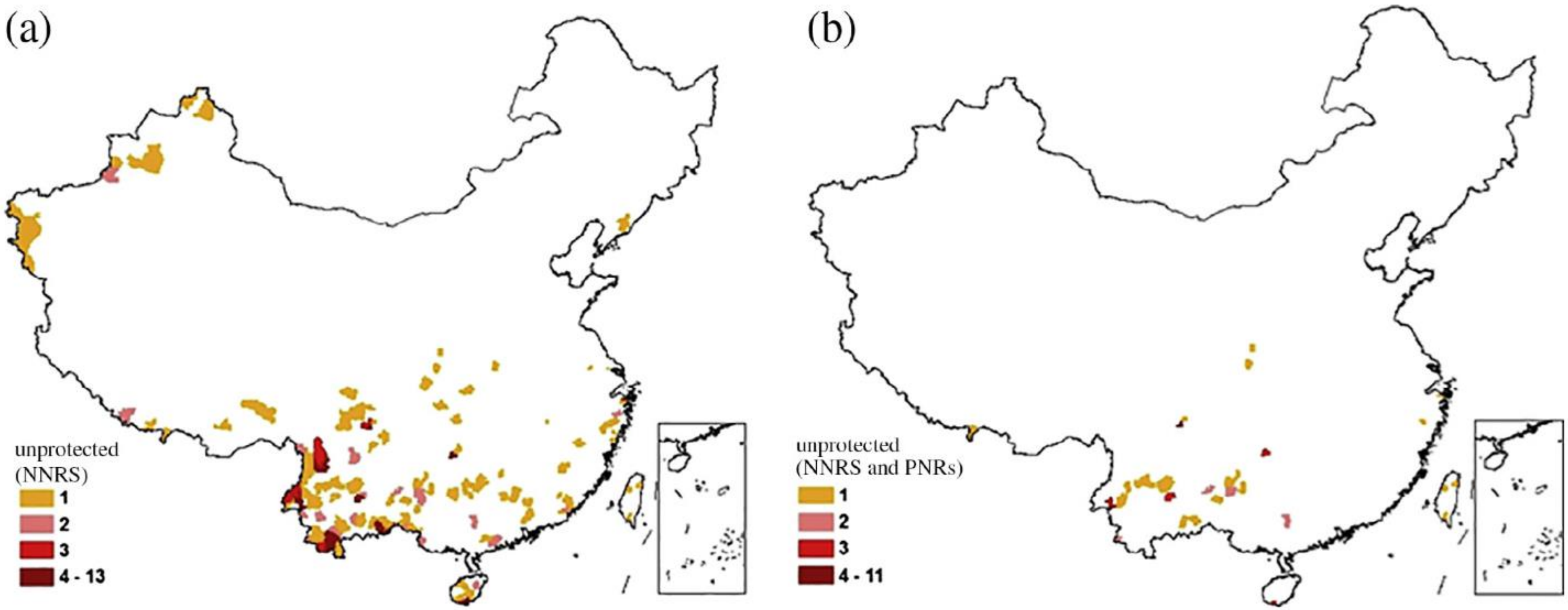
Zejin Zhang[a], Yujing Yan[a], Yu Tian[b], Junsheng Li[b], Jin-Sheng He[a], Zhiyao Tang[a,*]



Distribution of orchid richness in China:
(a) all orchids,
(b) terrestrial orchids,
(c) epiphytic orchids,
(d) lithophytic orchids,
(e) orchids endemic to China, and (f) orchids non-endemic to China.



Hotspots of orchid richness in China based on the complementary algorithm. The number for each grid indicated the order of selection by the complementary algorithm. The subset figure showed the increment of cumulative species richness with the number of selected grids by the complementary algorithm



Distribution of richness of orchids not covered by national nature reserves (a) and by either national or provincial nature reserves (b) in China

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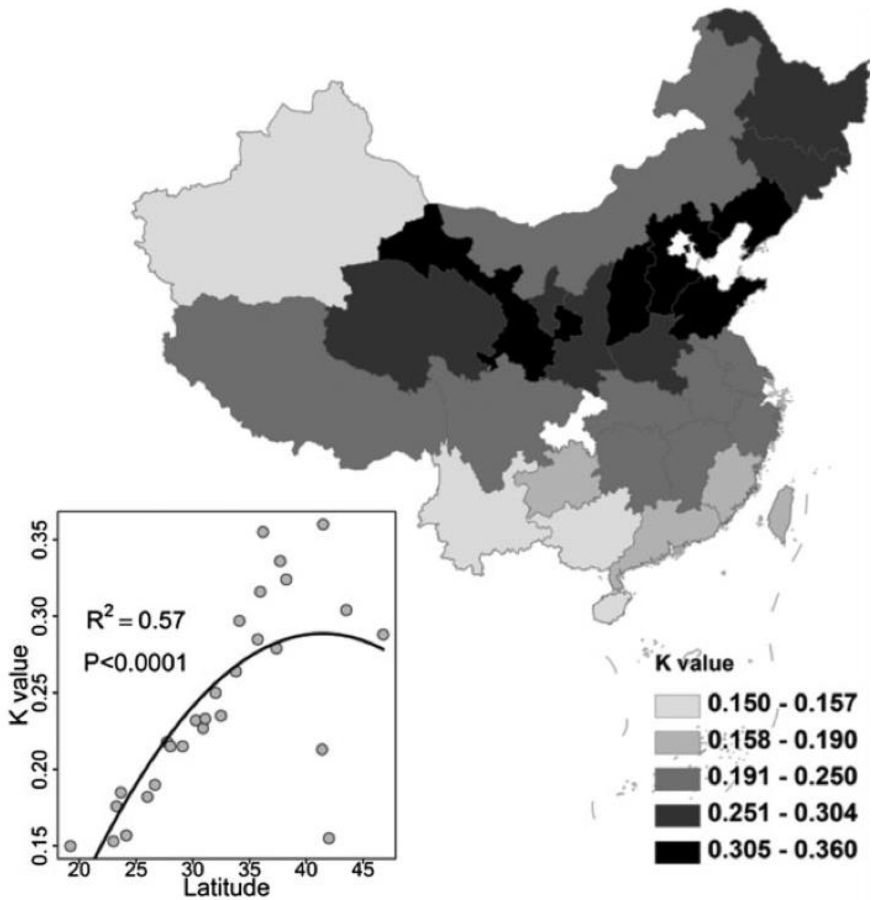
Global Ecology and Biogeography, (Global Ecol. Biogeogr.) (2015)

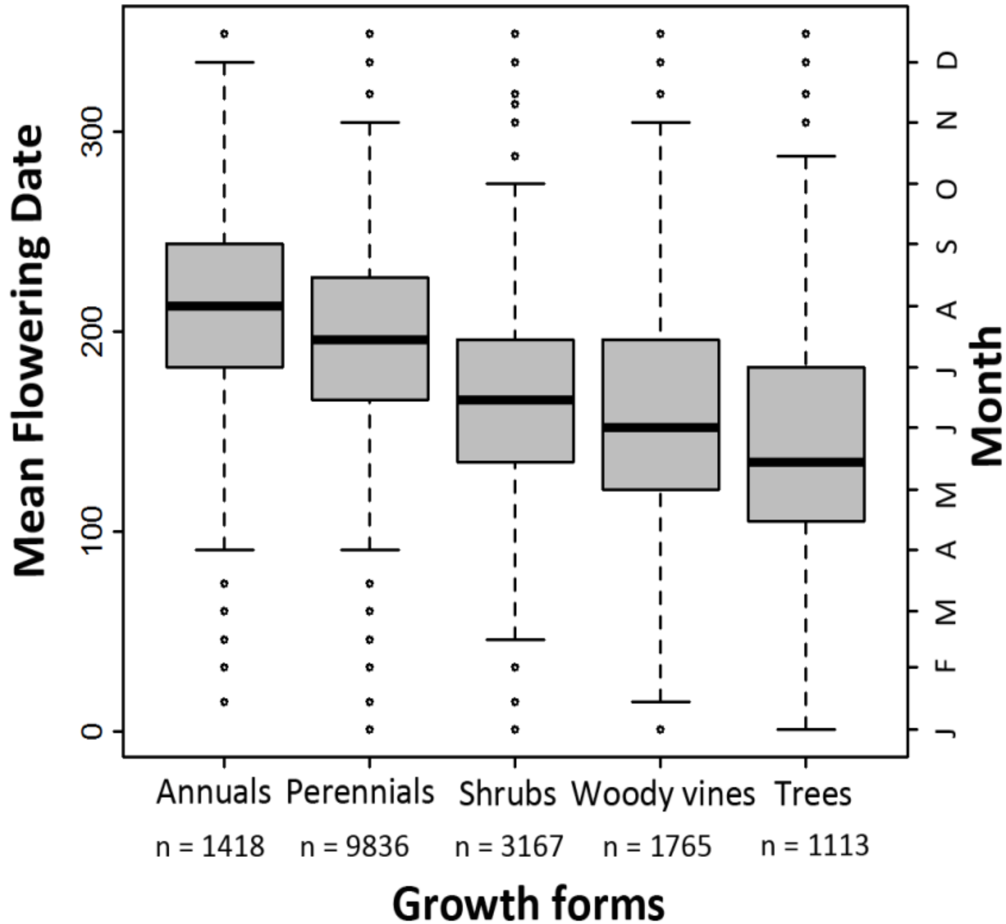
RESEARCH PAPER

Phylogenetic constraints and trait correlates of flowering phenology in the angiosperm flora of China

Yanjun Du[1], Lingfeng Mao[2], Simon A. Queenborough[3], Robert P. Freckleton[4], Bin Chen[1] and Keping Ma[1]*



Regression between the strength of phylogenetic conservatism in flowering phenology (Blomberg's *K*) and latitude, and the geographical patterns of the *K*-values in China estimated at the province scale. Each point in the regression represents a province of China. The line is the polynomial regression line with a quadratic term.



Flowering dates (in Julian days) for five growth forms. The box indicates median (heavy line) and quartiles; whiskers reach to points ≤ 1.5 times the interquartile ranges. The number below the boxplot is species number in each growth form.

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Herbarium specimens show contrasting phenological responses to Himalayan climate

Robbie Hart[a,b,1], Jan Salick[b], Sailesh Ranjitkar[c,d], and Jianchu Xu[c,d]

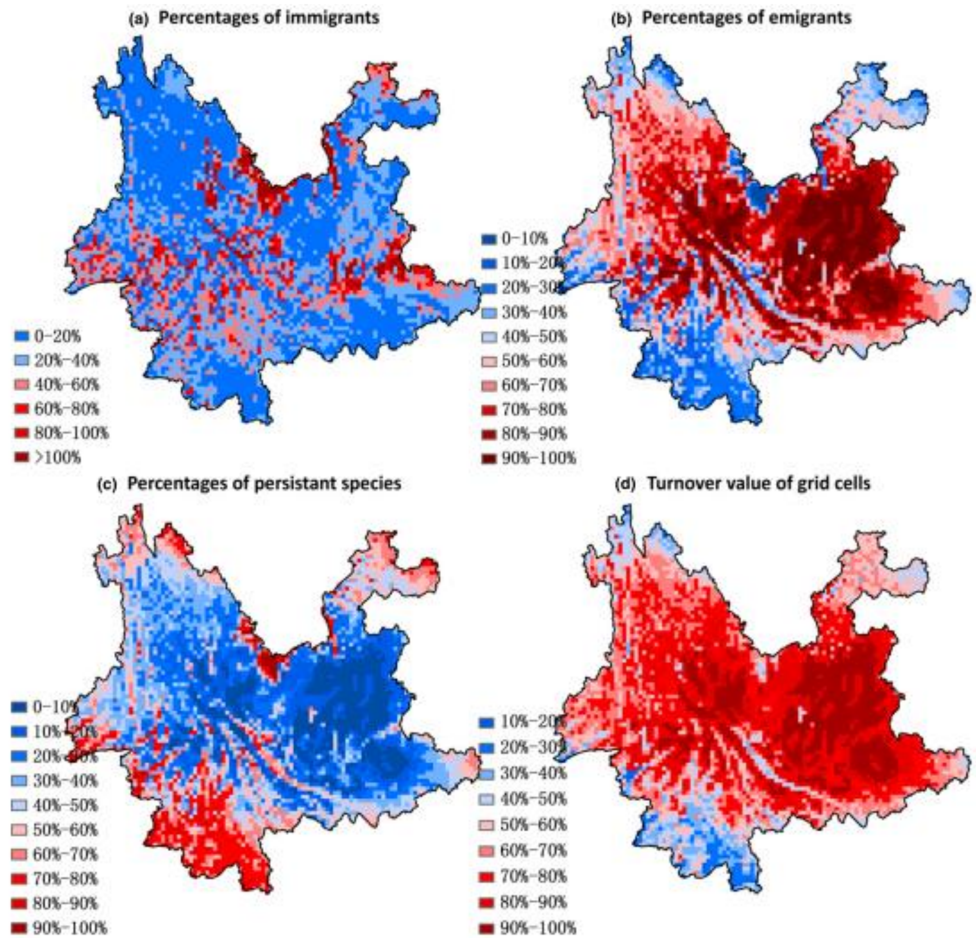
Responses by flowering plants to climate change are complex and only beginning to be understood. Through analyses of 10,295 herbarium specimens of Himalayan Rhododendron collected by plant hunters and botanists since 1884, we were able to separate these responses into significant components. We found a lack of directional change in mean flowering time over the past 45 y of rapid warming. However, over the full 125 y of collections, mean flowering time shows a significant response to year-to-year changes in temperature, and this response varies with season of warming. Mean flowering advances with annual warming (2.27 d earlier per 1 ° C warming), and also is delayed with fall warming (2.54 d later per 1 ° C warming). Annual warming may advance flowering through positive effects on overwintering bud formation, whereas fall warming may delay flowering through an impact on chilling requirements. The lack of a directional response suggests that contrasting phenological responses to temperature changes may obscure temperature sensitivity in plants. By drawing on large collections from multiple herbaria, made over more than a century, we show how these data may inform studies even of remote localities, and we highlight the increasing value of these and other natural history collections in understanding long-term change.

Diversity and Distributions, (Diversity Distrib.) (2013) 1–11

BIODIVERSITY RESEARCH

Major declines of woody plant species ranges under climate change in Yunnan, China

Ming-Gang Zhang[1,2,3], Zhe-Kun Zhou[1,4], Wen-Yun Chen[4], Charles H. Cannon[5,6], Niels Raes[7] and J. W. Ferry Slik[1]*




Thanks